REMARKS

The Office Action dated September 23, 2003 and the references cited therein have been carefully considered. In view of the foregoing amendments and the following remarks, it is submitted that the application is now in condition for allowance.

Prior to this Amendment, claims 40-47 were pending in this application. The Office Action rejected all previously pending claims. Specifically, claims 41-43 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,349,345 to Vanderschel and U.S. Patent 5,021,776 to Anderson. Claim 44-47 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderschel and Anderson and further in view of U.S. Patent 5,559,505 to McNair. In this regard, the Office Action did not list claim 40 in Paragraph 2 of the Action as being rejected. Nevertheless, since the Office Action Summary indicated that claims 40-47 were all rejected, applicants proceed with the following discussions under the assumption that the Office Action also intended to reject claim 40. If the Office Action actually intended otherwise, the Examiner is respectfully requested to indicate the allowability of claim 40 in the next Office Action.

Turning to the rejections, regarding claim 40, the Office Action appeared (since Paragraph 2 of the Action did not list claim 40 as being rejected) to assert that the printer port of Vanderschel's lock is a type of "port" that allows the read-back of a permanent access code in the lock. Applicants respectfully traverse this ground of the rejection for the reason that Vanderschel does not say that the report printed through the printer port includes any access code. *See* Vanderschel col. 3, lines 19-21. Nevertheless, to further distinguish the communication port in the claimed invention from the printer port of Vanderschel, applicants have amended claim 40 to include the step of sending a read signal through the communication port to the microprocessor-based control circuit of the lock to trigger the control circuit to transmit the access code stored in the non-volatile memory, and the limitation that the microprocessor-based control circuit transmits the access code through the

communication port in response to the read signal. It should be noted that it is the same communication port that is used to send a read signal and then to read back the access code. Support for these limitations is found, for instance, in page 14, lines 13-15 and FIG. 4 of the specification. Since a conventional printer port as in the device of Vanderschel is not used to initiate the transmission of data, Vanderschel clearly does not teach or suggest these limitations. Moreover, Vanderschel states that "The keypad 20 allows the user to input data and commands to the electronic lock." Col. 2, line 48. It can be inferred from this statement that it is not possible to give the lock of Vanderschel a command without using the keypad. Accordingly, claim 40 as amended should be allowable.

Turning to claim 42, since Paragraph 2 of the Office Action did not identify which claim it was referring to in its discussions, it is unclear which assertions regarding the teachings of Vanderschel or Anderson were considered to be pertinent to claim 42. Nevertheless, applicants submit the claim 42 should be allowable over the cited references. In particular, claim 42 is directed to a method of writing a permanent access code into the non-volatile memory of a lock control circuit during the manufacturing process. The key point of the claimed invention as recited in claim 42 is that the non-volatile memory does not have a permanent access code stored therein until such a code is entered through a communication port and written into the memory. In sharp contrast, although Vanderschel mentions key enrollment, which may involve the entering of new key parameters, it requires the lock memory to already have an existing access code before new keys can be enrolled. For instance, Vanderschel states: "the starter key may be used to enroll any other types of keys that will be needed for the safe." Col. 9, lines 11-15. Moreover, Vanderschel states: "In operation, in order to access the safe or any of the electronic lock's features, the user must have a key 46 which has been enrolled in the safe's database." Col. 3, line 39. Since the key enrollment operation of Vanderschel cannot work if the lock memory does not have any access code (i.e.,

enrolled key) to begin with, that process is entirely different from the process of claim 42 that writes a permanent access code into a non-volatile lock memory that does not contain an access code before the writing operation. Also, as mentioned above, it is not possible to give the lock of Vanderschel a command without using the keypad. Thus, it is clear that Vanderschel does not teach or suggest sending a write command through a communication port without using a keypad and before an access code is put into the lock. Accordingly, Vanderschel does not teach or suggest the claimed invention, and claim 42 should be allowable.

Claim 41 and 43 are directed to a feature of entering a user-programmed access code into an access control device that already contains a permanent access code. The claimed invention of claims 41 and 43 provides an easy and quick access code programming operation that is initiated by pressing a program key on a keypad of the access control device. In conventional electronic locks, programming a new code into the lock is often a complicated operation, requiring the user to go through several layers of menus to get to the program mode. This is especially the case for conventional battery-powered locks, as it is well-known in such applications to use a microprocessor that is set to go into a sleep mode to conserve the battery power when the lock is not being used, and the microprocessor has to be awakened by an external trigger signal and go into an operation mode before it can process any inputs by a user. In those conventional battery-powered locks, the microprocessor typically has a single interrupt line. Programming the lock requires the pressing of a START key or the like connected to that single interrupt line to send the trigger signal, before other control signals can be subsequently entered in order to set the lock in a mode for programming a new access code. In contrast, the microprocessor of the access control device of the claimed invention can wake up and immediately enter a code-programming mode when the user pressed a program key on the keypad a single time, without requiring other control signals. This is because the program key is wired to one of the multiple interrupt input pins of the microprocessor.

See, page 14, lines 2-5 of the specification. Thus, pressing the program key not only sends an interrupt signal to wake the microprocessor up from the sleep mode but also allows the microprocessor to determine that the program key is pressed and, in response, to enter the programming mode to allow an additional access code to be programmed into the memory. Applicants have amended claims 41 and 43 to include the limitations regarding the wiring of the program key to the one of the multiple interrupt inputs of the microprocessor that allows the microprocessor to wake up and enter the program mode by pressing the program key. Since Vanderschel has no teaching or suggestion regarding such a connection of a program key on a keypad to the microprocessor or the "one-touch" way to wake up the microprocessor and enter the programming mode, claims 41 and 43 should be allowable over Vanderschel alone or in combination with Anderson. Since claims 44-47 all depend from claim 43, they should also be allowable.

Applicants have also added new claims 48-63. Claims 48 and 49 depend from claims 40 and 41, respectively, and are directed to the reading and writing of a serial number of the electronic access control device through the communication port. Support for the limitations regarding the serial number is found, for instance, at page 14, lines 16-28 of the specification.

Claim 50, like claim 42, is directed to the feature of writing an access code into the non-volatile memory of an access control device through a communication port when the non-volatile memory initially does not already have an access code therein. Claim 52, like claim 40, is directed to the feature of using a communication port connected to a microprocessor-based control circuit of an access control device to send a read signal and then receive the access code read back from the non-volatile memory.

Claim 54 is directed to an access control device with a microprocessor that has a sleep mode for conservation of battery power and has multiple interrupt inputs connected to a keypad such that

the microprocessor can be waked up and switched into an operation mode in response of the pressing of a key in the keypad. This combination provides a lock that requires fewer keystrokes to operate and thus consumes less battery power. Claim 55 combines the device of claim 54 with a low battery detection circuit that is enabled only when the microprocessor is in the operation mode to provide further reduction of battery power consumption. Claim 56 combines the device of claim 54 with a low-power solenoid operation technique to further enhance the efficiency of battery power usage. Claim 57 combines the device of claim 54 with a program key entry setup that enables a very efficient keystroke operation to enter a new access code. This minimizes the time in the operation mode and thus minimizing power consumption.

Claim 62 is directed to a way to energize a solenoid of a lock to conserve battery power and is nearly identical to claim 18 of U.S. Patent 6,359,547 that issued from the parent of this application, but with the added limitation that the preset time of energizing the solenoid at a lower power is about 3 seconds. Support for this limitation is found at page 17, lines 26-29 of the specification. It should be noted that the 3-second internal is chosen because 3 seconds is generally sufficient for a user after entering the access code through a keypad to move her hand from the keypad to operate a handle to open the lock, but is not too long to unnecessarily run down the battery or to give an unauthorized person the chance to open the lock a second time after the first person closes the lock.

Claim 63 is directed to a low-battery detection circuit of a battery-powered access control device and is very similar to claim 15 of the '547 patent but recites the low-battery detection circuit in a slightly broader manner.

Claim 64 depends from claim 42 and is directed to a feature of writing a command through the communication port into the non-volatile memory of the electronic access control device to

disable the permanent access code stored in the non-volatile memory. Support for this limitation is found at page 14, lines 16-28 of the specification.

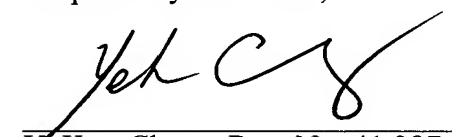
It is submitted that these new claims are allowable over the cited art.

Conclusion:

The application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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